AMENDED CLAIMS
received by the International Bureau on 02 May 2005 (02.05.2005): original claims 1-99 have been replaced by amended claims 1-67.

1. A delivery system for a biologically active agent comprising:

a gemini surfactant in admixture with a biologically active agent, wherein the delivery system, when in contact with the skin or mucosal membrane, provides a localized or systemic effect for treatment of a skin disorder or a metabolic disease.

2. The delivery system according to claim 1, wherein the gemini surfactant is selected from an anionic gemini surfactant, a gemini cationic surfactant, a neutral gemini surfactant, an amphoteric gemini surfactant, or mixtures thereof.

3. The delivery system according to claim 2, wherein the gemini surfactant is a gemini cationic surfactant.

4. The delivery system according to claim 3, wherein the gemini cationic surfactant is of a quaternary ammonium type.

5. The delivery system according to claim 4, wherein the gemini cationic surfactant has a hydrophobic tail comprising a C_3-C_{30} alkyl group, linear or branched, saturated or unsaturated.

6. The delivery system according to claim 1 or 5, wherein the biologically active agent is selected from the group consisting of a nucleic acid, plasmid DNA, DNA vaccine, protein, vaccine, immunoglobulin, immunomodulator, oligonucleotide, peptide, hormone, toxin, and enzyme.

7. The delivery system according to claim 6, wherein the biologically active agent is selected from the group consisting of a nucleic acid, plasmid DNA, DNA vaccine, and oligonucleotide.

8. The delivery system according to claim 7, wherein the biologically active agent is a plasmid DNA comprising the gene encoding for interferon-γ for treatment of scleroderma, atopic dermatitis, or any condition characterized by interferon-γ deficiency.

9. The delivery system according to claim 1 or 7, wherein the skin disorder is selected from the group consisting of scleroderma, atopic dermatitis, psoriasis, conditions characterized by any cytokine deficiency, conditions characterized by IFNγ deficiency, an epidermal fragility disorder, a keratinization disorder, a hair disorder, a pigmentation disorder, a porphyria, a multisystem disorder, cancer, inherited epidermolysis bullosa;

39. The pharmaceutical composition according to claim 36, wherein the oily phase component is selected from the group consisting of propylene glycol monocaprylate, oleoyl macrogol-6 glycerides, PEG-8 glyceryl linoleate, propylene glycol laurate, propylene glycol monolaurate, and octyldodecyl myristate.

40. A method of treating skin disorders and metabolic diseases comprising:

contacting the skin or mucosal membrane of a subject with a delivery system comprising a gemini surfactant in admixture with a biologically active agent in a topical formulation, wherein the delivery system, when in contact with the skin or mucosal membrane, provides a localized or systemic effect for treatment of a skin disorder or a metabolic disease.

41. The method according to claim 40, wherein the gemini surfactant is selected from an anionic gemini surfactant, a gemini cationic surfactant, a neutral gemini surfactant, an amphoteric gemini surfactant, or mixtures thereof.

42. The method according to claim 41, wherein the gemini surfactant is a gemini cationic surfactant.

43. The method according to claim 42, wherein the gemini cationic surfactant is of a quaternary ammonium type.

44. The method according to claim 43, wherein the gemini cationic surfactant has a hydrophobic tail comprising a C_3-C_{30} alkyl group, linear or branched, saturated or unsaturated.

45. The method according to claim 40 or 44, wherein the biologically active agent is selected from the group consisting of a nucleic acid, plasmid DNA, DNA vaccine, protein, vaccine, immunoglobulin, immunomodulator, oligonucleotide, peptide, hormone, toxin, and enzyme.

46. The method according to claim 45, wherein the biologically active agent is selected from the group consisting of a nucleic acid, plasmid DNA, DNA vaccine, and oligonucleotide.

47. The method according to claim 46, wherein the biologically active agent is a plasmid DNA comprising the gene encoding for interferon-γ for treatment of scleroderma, atopic dermatitis, or any condition characterized by interferon-γ deficiency.

48. The method according to claim 40 or 46, wherein the skin disorder is selected from

consisting of PEG-8 caprylic and capric glycerids.

58. The method according to claim 56, wherein the co-surfactant is selected from the group consisting of polyglyceryl 3- diisostearate, polyglyceryl-6 isostearate, polyglycerol-3-isosterate and polyglyceryl-6 dioleate.

59. The method according to claim 56, wherein the oily phase component is selected from the group consisting of propylene glycol monocaprylate, oleoyl macrogol-6 glycerides, PEG-8 glyceryl linoleate, propylene glycol laurate, propylene glycol monolaurate, and octyldodecyl myristate.

60. Use of a delivery system in the treatment of a skin disorder or metabolic disease, wherein the delivery system comprises a gemini surfactant in admixture with a biologically active agent in a topical formulation, and the delivery system, when in contact with the skin or mucosal membrane, provides a localized or systemic effect.

61. The use according to claim 60, wherein the gemini surfactant is selected from an anionic gemini surfactant, a gemini cationic surfactant, a neutral gemini surfactant, an amphoteric gemini surfactant, or mixtures thereof.

62. The use according to claim 61, wherein the gemini surfactant is a gemini cationic surfactant.

63. The use according to claim 62, wherein the gemini cationic surfactant is of a quaternary ammonium type.

64. The use according to claim 63, wherein the gemini cationic surfactant has a hydrophobic tail comprising a C_3-C_{30} alkyl group, linear or branched, saturated or unsaturated.

65. The use according to claim 60 or 64, wherein the biologically active agent is selected from the group consisting of a nucleic acid, plasmid DNA, DNA vaccine, protein, vaccine, immunoglobulin, immunomodulator, oligonucleotide, peptide, hormone, toxin, and enzyme.

66. The use according to claim 65, wherein the biologically active agent is selected from the group consisting of a nucleic acid, plasmid DNA, DNA vaccine, and oligonucleotide.

67. The use according to claim 66, wherein the biologically active agent is a plasmid DNA comprising the gene encoding for interferon-γ for treatment of scleroderma, atopic dermatitis, or any condition characterized by interferon-γ deficiency.